



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/599,385

08/09/2007

Moshe Malik

37705

7857

67801 7590 01/19/2010
MARTIN D. MOYNIHAN d/b/a PRTSI, INC.
P.O. BOX 16446
ARLINGTON, VA 22215

EXAMINER

MCGRAW, TREVOR EDWIN

ART UNIT

PAPER NUMBER

3752

MAIL DATE

DELIVERY MODE

01/19/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,385	Applicant(s) MALIK ET AL.	
	Examiner Trevor E. McGraw	Art Unit 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-11, 14-18, 23-40 and 42-57 is/are rejected.
- 7) ☒ Claim(s) 7, 8, 12, 13, 19-22 and 41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/30/08;09/07/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 9, 10, 14-18, 23, 24, 35, 36, 38-40, 42-45 and 47-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Wacker et al (US 5,938,079).

In regard to Claims 1, Wacker et al teach a chemical mixing device (30) having a flow generator (20,21) operative to provide at least two streams of chemicals (chemical of "12" and "13"), and a mixing chamber (83,89; see Figure below), including at least two inlets (58a, 58c) adapted to receive the at least two streams of chemicals (see column 5, lines 36-41) and an outlet (outlet of "96") through which a mixture of the streams of chemicals is ejected from the mixing device (30), wherein the mixing chamber (83,89; see Figure below) has an open state (see open state of "83", "89" in Figure 7) in which the chemicals are mixed and a closed state (see closed state of "83", "89" in Figures 8 and 9) in which the volume of the mixing chamber (83, 89; see Figure below) is less than a fifth of the open state volume.

In regard to Claims 2-4, Wacker et al also teach where the mixing chamber (83, 89; see Figure below) has a substantially zero volume in the closed state (see closed state of "83" and "89" in Figure 8) where the mixing chamber (83, 89; see Figure below)

Art Unit: 3752

has walls (98) that are biased in a closed state in which the walls (98) are pressed against each other (see Figure 8 that shows "98" in biased against one another in the closed position) and the walls (98) of the mixing chamber (98) are biased in the closed state by a pressure greater than required to keep the mixing chamber in the closed state (See Figure 8 where the pressure required to keep mixing chamber closed at "98" is greater than the pressure to keep the mixing chamber in the closed state; see Figure 9 where mixing chamber is closed via "98" but not flat as shown in Figure 8.).

In regard to Claims 5 and 6, Wacker et al teach where the mixing chamber has a volume capable of being smaller than a cubic millimeter in the closed state and a volume of less than 20 cubic millimeters in the open state (see Figures 7 and 8 where volume is smaller than recited limitations between "98" in both figures).

In regard to Claims 9, 10, 15 and 16, Wacker et al further teach where the mixing chamber comprises a flexible material ("98" is made of a flexible material) and where the mixing chamber comprises a compressible material ("98" is also compressible) and the flow generator (20, 21) and a nozzle (96) containing the mixing chamber are connected to each other and are adapted to be replaced together and the nozzle containing the mixing chamber and containers from which the flow generator extract the chemicals are adapted to be replaced together (parts of Wacker et al are able to be adapted to be replaced as desired to include together as desired by a user).

In regard to Claim 14, Wacker et al teach where a pressure unit which controllably applies a closing pressure on the mixing chamber, when the mixing

Art Unit: 3752

chamber is in the closed state, but does not apply the closing pressure when the mixing chamber is to be in the open state (see column 7, lines 58-62).

In regard to Claims 17, 18, 23 and 24, Wacker et al additionally teach where at least two channels (channels of "58a" and "58c") which lead the chemicals to the mixing chamber (83, 89; see Figure below), where the channels (channels of "58a" and "58c"; see Figure 6 where cross-section decreases in "70a") have a decreasing cross-section as they approach the mixing chamber (83, 89; see Figure below) and the at least two channels (channels of "58a" and "58c") which lead the chemicals to the mixing chamber (83, 89; see Figure below), where at least a portion of the channels is held in a closed state when the flow generator does not operate (58a and 58c can be in a closed state when "20" and "21" are not operating) where the walls (98) of the mixing chamber (83,89; see Figure below) are pressed against each other in the closed state ("98" closed in Figure 8) and the walls (98) of the mixing chamber (83, 89; see Figure below) are pressed against each other in the closed state, by an external force (external force applied to "98" via "100" and "102".).

In regard to Claim 35, Wacker et al teach a chemical mixing device (30) having a flow generator (20,21) operative to provide at least two streams of chemicals (chemical of "12" and "13"), and a mixing chamber (83,89; see Figure below), including at least two inlets (58a, 58c) adapted to receive the at least two streams of chemicals (see column 5, lines 36-41) and an outlet (outlet of "96") through which a mixture of the streams of chemicals is ejected wherein the mixing chamber (83, 89; see Figure below) is formed of a flexible material (see flexible material of "98").

In regard to Claims 36, 38 and 39, Wacker et al also teach where the mixing chamber is formed of a material to which polyurethane foam does not stick (see column 8, lines 37-40) and an external pressure applicator which continuously applies a closing pressure to the mixing chamber and the mixing chamber is formed as a single piece with at least two chemical leading channels for leading chemical to the mixing chamber.

In regard to Claim 40, Wacker et al teach a flow generator (20, 21, 24) operative to provide at least two streams of chemicals and a mixing chamber (53, 83, 89) including at least two inlets (inlets of "58a" and "58c") adapted to receive the at least two streams of chemicals and an outlet (outlet of "96") through which a mixture of the streams of chemicals is ejected and a flow regulator (valve rods of 58a and 58c) are capable of preventing flow into the mixing chamber unless the chemical streams from the flow generator (20, 21, 24) have a pressure above a threshold of at least 2 bar.

In regard to Claim 42, Wacker et al teach where the flow regulator (valve rods of 58a and 58c) are capable of preventing flow into the mixing chamber unless the chemical streams from the flow generator (20, 21, 24) have a pressure above a threshold of at least 4 bar.

In regard to Claim 43, Wacker et al teach a chemical mixing device (30) having a flow generator (20,21) operative to provide at least two streams of chemicals (chemical of "12" and "13"), and a mixing chamber (83,89; see Figure below), including at least two inlets (58a, 58c) adapted to receive the at least two streams of chemicals (see column 5, lines 36-41) and an outlet (outlet of "96") through which a mixture of the streams of chemicals is ejected and at least two channels (see channels of "58a" and

Art Unit: 3752

"58c" that lead to "53") having a decreasing cross section area, adapted to lead the chemical streams to the inlets of the mixing chamber (83,89; see Figure below).

In regard to Claims 44 and 45, Wacker et al also teach where one or more of the at least two channels (channels of "58a" and "58c" that lead to "53") have monotonically non-increasing cross section over adjacent the inlet of the mixing chamber and wherein one or more of the at least two channels (channels of "58a" and "58c" that lead to "53") have a cross-section which decreases by at least a factor of 2, from an entrance of the chemicals to the channels, to the inlet of the mixing chamber.

In regard to Claim 47, Wacker et al teach a foam dispensing device (30) comprising a plurality of input tubes (22,23, 28, 29) adapted to receive chemicals, a mixing chamber (83,89; see Figure below) having at least one elastic wall (98) and a flow generator (20, 21, 24) adapted to induce flow of the chemicals received from the input tubes (22, 23, 28, 29) into the mixing chamber (53, 83, 89; see Figure below), wherein the mixing chamber (53, 83, 89; see Figure below) has a first volume when the flow generator (20, 21, 24) is not operating, and a second, larger volume when the flow generator (20, 21, 24) induces flow of the chemicals into the mixing chamber (53, 83, 89; see volume when the valves of "58a" and "58c" that permit chemical to enter "53" are closed is fixed and when the valves open the volume of the chamber is larger due to the valve members not being disposed in "53" in Figure 2).

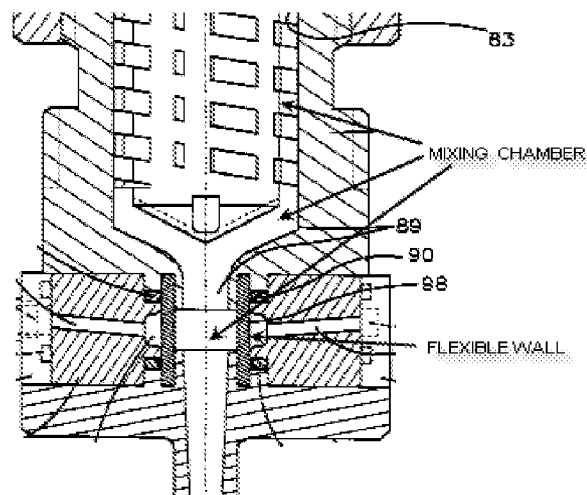
In regard to Claims 48-51, Wacker et al further teach where the input tubes (28,29) receive chemicals from containers (12, 13) included in a casing of the dispensing device (30; see where "28 and "29" are included in "30" in Figure 1) and the

Art Unit: 3752

plurality of input tubes (28, 29) receive chemicals from the containers (12, 13) not mounted on the dispenser device (30) and the flow generator (20, 21, 24) comprises a pump where the pump comprises a gear pump ("24" is a gear pump as noted in US 5,332,125 see column 4, lines 50-55).

In regard to Claims 52 and 53, Wacker et al additionally teach where the at least one elastic wall (98) closes the path from the input tubes to the mixing chamber and the mixing chamber (83, 89; see Figure below) has a large opening to the environment (see opening of "96" from mixing chamber).

FIGURE



Claims 54-57 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown (US 5,242,115).

Art Unit: 3752

In regard to Claim 54, Brown teaches a kit for replacement of a mixing chamber of a dispensing gun having a package (10), a mixing chamber (100), within the package (10) and a flow generator (28) connected to the mixing chamber (100), within the package (10).

In regard to Claims 55 and 56, Brown also teaches where the flow generator (28) and the mixing chamber (100) are connected such that they require use of tools for separation and at least one container is included in the package (10; see column 5, lines 38-43) connected to the flow generator (28).

In regard to Claim 57, Brown further teaches a kit for replacement of a mixing chamber (100) of a dispensing gun (see Gun in Figure 1) comprising a package (10), a nozzle (16) defining a mixing chamber (100), within the package (10) and at least one chemical container connected to the nozzle (16), within the package (10; see column 5, lines 38-43).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 25-30, 33, 34 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wacker et al (US 5,983,079).

In regard to Claims 25, 26 and 34, Wacker et al as described above substantially teach the present invention with the exception of where the volume of the mixing chamber from a first mixing point of the streams to the outlet is not greater than 20 cubic millimeters and the length of the mixing chamber from the inlets to the outlet is not longer than 15 millimeters and the mixing chamber has an average cross section area of less than 10 square millimeters. It would have been an obvious matter of design choice to make the volume of the mixing chamber from a first mixing point of the streams to the outlet is not greater than 20 cubic millimeters and the length of the mixing chamber from the inlets to the outlet is not longer than 15 millimeters and the mixing chamber has an average cross section area of less than 10 square millimeters, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. Furthermore, the general conditions of a claim are met by the prior art, and a person having ordinary skill would recognize that making a component smaller, bigger, longer or shorter does not involve innovation but requires only common sense for smaller or larger applications.

In regard to Claims 27-29, Wacker et al teach where the flow generator is adapted to provide the streams at a sufficient pressure such that when the streams reach the first mixing point they have a pressure sufficient to push out of the mixing chamber foam remnants filling the entire mixing chamber and the cross section of the mixing chamber increases monotonically from the first mixing point to the outlet and the cross section of the mixing chamber is substantially constant from the first mixing point

Art Unit: 3752

to the outlet (see first mixing point in "53" where the entering streams push out content that is present in lower part of mixing chamber; see where the cross section of "53" is monotonically between inlet and outlet of "53" and the cross section is substantially constant from the first mixing point to the outlet).

In regard to Claim 30, Wacker et al teach where the pressure valve (valve rods of 58a and 58c) is capable of preventing at least one of the chemical streams from reaching the first mixing point unless the stream applies a pressure above 3 bar.

In regard to Claim 33, Wacker et al teach where the mixing chamber is formed of a material that does not stick to polyurethane foam (see column 8, lines 37-40).

In regard to Claim 46, Wacker et al as described above substantially teach the present invention with the exception of where one or more of the at least two channels has a cross-section of less than 3 square millimeters at the inlet to the mixing chamber. It would have been an obvious matter of design choice to make one or more of the at least two channels to have a cross-section of less than 3 square millimeters at the inlet to the mixing chamber, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. Furthermore, the general conditions of a claim are met by the prior art, and a person having ordinary skill would recognize that making a components area larger or smaller does not involve innovation but requires only common sense for smaller or larger applications.

Art Unit: 3752

Claims 11, 31, 32 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wacker et al (US 5,938,079) in view of Chimura (US 3,451,347).

In regard to Claims 11, 31, 32 and 37, Wacker et al as described above substantially teach the present invention with the exception of where the mixing chamber material has a hardness of less than 40 Shore A and less than 60 Shore A.

However, Chimura teaches having a chamber material that has a hardness of 30 to 40 Shore A.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the present invention was made to have substituted the mixing chamber material of Wacker et al ("98" material) with the chamber material of Chimura in order to provide for a soft chemical-resisting material.

Allowable Subject Matter

Claims 7, 8, 12, 13, 19-22 and 41 are objected to as being dependent upon a rejected base claim, but appear to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cole (US 3,178,157), Hurray et al (US 6,691,898), Harman et al (US 6,216,915) drawing to two component fluid dispensing apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trevor E. McGraw whose telephone number is (571) 272-7375. The examiner can normally be reached on Monday-Friday (2nd & 4th Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/T. E. M./
Examiner, Art Unit 3752
/Len Tran/
Supervisory Patent Examiner, Art Unit 3752